

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-33. (canceled)

34. (new) Process for treating a gas with an active packing contained in a vessel, which comprises the steps of:

performing a treatment cycle which includes at least one treatment phase, in the course of which a gas to be treated is caused to circulate through the packing, and at least one regeneration phase for regenerating the packing; and

during at least one phase of the cycle, locally increasing or decreasing a flow of gas circulating in the vessel in a marginal region of the packing.

35. (new) Process according to claim 34, wherein the packing comprises at least one bed of active adsorbent particles.

36. (new) Process according to claim 35, wherein said bed is annular.

37. (new) Process according to claim 36, wherein said marginal region is an upper region, forming a guard, of said annular bed.

38. (new) Process according to claim 34, wherein during said at least one phase, said marginal region is placed in

communication with a point which lies at a pressure different from that of an adjacent region of the packing.

39. (new) Process according to claim 38, wherein said point is a point of the surrounding atmosphere.

40. (new) Process according to claim 34, wherein said at least one phase is the regeneration phase for flushing the packing with a regeneration gas.

41. (new) Process according to claim 40, wherein in the course of said at least one phase, the ratio of the flow rate of regeneration gas to the flow rate of gas to be treated is caused in said marginal region to be greater than the overall ratio of these two flow rates in the packing.

42. (new) Process according to claim 41, wherein during said at least one phase, said marginal region is placed in communication with a point which lies at a pressure different from that of an adjacent region of the packing, and said point is a point of a conduit for evacuation of the regeneration gas having passed through the packing.

43. (new) Process according to claim 41, wherein during said at least one phase, said marginal region is placed in communication with a point which lies at a pressure different from that of an adjacent region of the packing, and said point is a point of a supply conduit for the regeneration gas.

44. (new) Process according to claim 34, wherein said at least one phase is the treatment phase.

45. (new) Process according to claim 43, wherein during said at least one phase, said marginal region is placed in communication with a point which lies at a pressure different from that of an adjacent region of the packing, and said point is the delivery of a compressor provided onto a conduit for production of treated gas.

46. (new) Process according to claim 34, wherein said at least one phase is a phase for recompression of the packing.

47. (new) Process according to claim 43, wherein during said at least one phase, said marginal region is placed in communication with a point which lies at a pressure different from that of an adjacent region of the packing, and said point is a point of a conduit for production of treated gas.

48. (new) Process according to claim 34, wherein said at least one phase is a phase for decompression of the packing.

49. (new) Process according to claim 34, wherein the packing comprises two concentric annular beds, and said marginal region comprises an upper region, forming a guard, of each annular bed.

50. (new) Process according to claim 49, wherein the height of each guard-forming region is at most equal to half of the radial thickness of the corresponding bed, and in the course

of said at least one phase, the guard-forming regions of the two beds are placed in communication with one another.

51. (new) Process according to claim 49, wherein during said at least one phase, the upper region of the radially inner bed is placed in communication with a point which lies at a lower pressure, and an additional auxiliary gas is introduced into the space overlying the other bed.

52. (new) Process according to claim 49, wherein during said at least one phase, an auxiliary gas is introduced into each of the spaces overlying a bed.

53. (new) Process according to claim 34, wherein the treatment is a purification by adsorption of atmospheric air intended to be distilled.

54. (new) Process according to claim 34, wherein the treatment is a separation of atmospheric air for production of oxygen by pressure modulated adsorption optionally under vacuum.

55. (new) A reactor having an active regenerable packing in a vessel, wherein at least one marginal region of the packing is provided with flow control means operable for placing said marginal region at least temporarily in fluid communication with a zone which lies at a different pressure from that of an adjacent region of the packing.

56. (new) Reactor according to claim 55, wherein said control means comprise a conduit equipped with a stop valve.

57. (new) Reactor according to claim 55, wherein said control means comprise a passage equipped with an anti-return flap valve adapted to close during active operating phases of the packing, and to open during regeneration phases of the packing.

58. (new) Reactor according to claim 56, wherein the packing comprises at least one bed of active adsorbent particles.

59. (new) Reactor according to claim 58, wherein said bed is annular.

60. (new) Reactor according to claim 59, wherein said conduit connects the space situated above the bed to the surrounding atmosphere.

61. (new) Reactor according to claim 59, wherein said conduit connects the space situated above the bed to a conduit for evacuation of gas from the bottom of the reactor.

62. (new) Reactor according to claim 59, wherein said conduit connects the space situated above the bed to a supply conduit for supplying auxiliary gas.

63. (new) Reactor according to claim 62, wherein said supply conduit is connected to an outlet of gas treated by the reactor.

64. (new) Reactor according to claim 62, wherein said supply conduit is equipped with a compressor.

65. (new) Reactor according to claim 59, wherein the packing comprises two concentric annular beds, and a passage

provided with a valve of an anti-return flap valve connects the spaces which overlies the two beds.

66. (new) Reactor according to claim 59, wherein the packing comprises two concentric annular beds, and at least one partition delimiting a space overlying a bed is provided with an opening equipped with an anti-return flap valve which opens radially outwardly or inwardly.

67. (new) Reactor according to claim 57, wherein said bed is annular, and said passage connects the space situated above the bed to the surrounding atmosphere.

68. (new) Reactor according to claim 57, wherein said bed is annular, and said passage connects the space situated above the bed to a conduit for evacuation of gas from the bottom of the reactor.

69. (new) Reactor according to claim 57, wherein said bed is annular, and said passage connects the space situated above the bed to a supply conduit for supplying auxiliary gas.

70. (new) Process for treating a gas in an active packing in a vessel, comprising the steps of:

performing a treatment cycle including at least one treatment phase, during which a gas to be treated is caused to circulate through the packing, and at least one regeneration phase for regenerating the packing; and

during at least one of the phases of the treatment cycle, placing at least temporarily at least one marginal region of the packing in the vessel in fluid communication with a point at a pressure different from that of a zone of the packing adjacent said marginal region.